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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/760,978	01/20/2004	Wunibald Frey	10191/3482	1999
26646	7590	02/01/2006	EXAMINER	
KENYON & KENYON LLP ONE BROADWAY NEW YORK, NY 10004			PIGGUSH, AARON C	
			ART UNIT	PAPER NUMBER
			2838	

DATE MAILED: 02/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/760,978

Applicant(s)

FREY ET AL.

Examiner

Aaron Piggush

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 9-11 is/are rejected.
- 7) ☒ Claim(s) 6-8 and 12-14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 January 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 14 November 2005.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION***Drawings***

1. The drawing labeled "FIG 1" is objected to under 37 CFR 1.83(a) because it fails to show the details as described in the specification. It only includes a box diagram and should show more specific details of the invention, as they are mentioned in the specification and the claims. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claims 3-5, 8, 10-12, and 14 are objected to because of the following informalities: Claims 3, 10, and 12 do not define the variable U, claim 8 does not define U(τ), and claim 14

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does not define $L(t)$ or $a[U(\tau)]$. Claims 4, 5, and 11 are objected to as being dependent upon an objected claim.

Furthermore, examiner notes that $U(\tau)$ is addressed in claim 13, and $L(t)$ and $a[U(\tau)]$ are addressed in claim 8, however, the definitions of those variables are not present within the other set of claims (either 1-8 or 9-14). The definitions mentioned above should be added to the other set of claims from which they are missing. Additionally, the variable U is taken as the battery voltage, according to the specification, but should also be added to the claims from which it is missing. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-5 and 9-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Verbrugge (US 6,359,419).

With respect to claims 1 and 9, Verbrugge discloses a device and method for determining a state of a vehicle battery, comprising:

a batter voltmeter for measuring a voltage of the battery (col 3 ln 32-35 and 55-65, col 7 ln 35-50, col 9 ln 35-44, and no. 15 in Fig. 2), (the requirement for the voltmeter is met by the reference because it uses the battery's voltage measurement in its calculations, and in order to receive/use that measurement, the device must have a

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voltage sensor or voltmeter; additionally, the reference mentions monitoring the voltage in col 3 ln 32-35); and

an evaluation unit coupled to the battery voltmeter for deriving information regarding the state of the vehicle battery as a function of a measured battery voltage using an integration procedure (no. 15 and 23 in Fig. 2, col 3 ln 50-65, and col 4 ln 25-48), the evaluation unit taking into account a variable weighting factor in the integration procedure (col 4 ln 35-40, col 5 ln 34-52, and col 9 ln 55-62).

With respect to claim 2, Verbrugge discloses wherein the weighting factor is a function of the measured battery voltage (col 9 ln 55 to col 10 ln 60 and col 5 ln 35-52).

With respect to claims 3 and 10, Verbrugge discloses wherein the evaluation unit calculates the weighting factor according to $a(U) = \sum k_i \cdot a_i(U)$, k_i being prefactors that are varied adaptively, and $a_i(U)$ being weight functions (col 9 ln 55 to col 10 ln 45).

With respect to claims 4 and 11, Verbrugge discloses wherein the evaluation unit has at least one input for status information (col 3 ln 55-65 and connections of no. 15 and 23 with 16 and 25 in Fig. 2) and is provided for an adaptation of the prefactors as a function of the status information (col 9 ln 55 to col 10 ln 60).

With respect to claim 5, Verbrugge discloses the method further comprising determining the status information, using an open-circuit voltage measurement (V_o in col 9 ln 31 to col 10 ln 30) or using signals provided by an electrical energy management (no. 15 and 23 in Fig. 2 and col 3 ln 32-35). Additionally, this method is met because the energy management and hybrid system controllers must use signals in order to monitor/calculate/transmit the status information.

Allowable Subject Matter

5. Claims 6-8 and 12-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Additionally, claims 8 and 14 are objected to for additional reasons as listed above under claim objections, and those objections should also be addressed.

Claims 6 and 12 recite a method (implemented by an evaluation unit for claim 12) further comprising determination of the weighting factor according to a correlation wherein the weighting factor is equal to 0 if the measured battery voltage lies between the predefined upper and lower voltage threshold values and wherein the weighting factor is equal to 1 if the measured battery voltage is less than the predefined lower voltage threshold value or greater than the predefined upper voltage threshold value.

Claims 7 and 13 recite a method (implemented by an evaluation unit for claim 13) further comprising forming a difference within the framework of the integration procedure in which the sum of the upper and lower voltage threshold values is divided by two and then subtracted from a measured battery voltage value.

Claims 8 and 14 recite a correlation (implemented by an evaluation unit for claim 14) used to ascertain information regarding the state of a vehicle battery by use of a battery voltage integral containing a product of the differential result from claims 7 and 13, respectively, and the weighting factor.

The prior art of record does not disclose the above limitations, nor would it be obvious to combine the art in such a manner.

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Conclusion

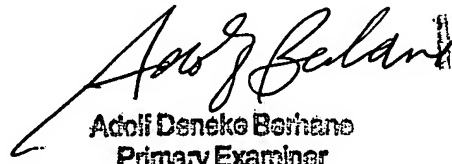
6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ying (US 6,356,083) discloses a state of charge algorithm for a battery, including steps that use integration and open circuit voltage measurements. Ochiai (US 6,522,148) discloses a state of charge measuring apparatus for battery device, including steps that use integration and SOC limits.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron Piggush whose telephone number is 571-272-5978. The examiner can normally be reached on Monday-Friday 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Karl Easthom can be reached on 571-272-1989. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AP


Adolf Deneke Borhane
Primary Examiner